DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division — Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: FLINTS	POND	Lake Area (ha):	19.42
Town:	HOLLIS	Maximum depth (m):	2.7
County:	Hillsborough	Mean dept <u>h</u> (m):	1.5
River Basin:	Merrimack	Valume (m³):	294500
Latitude:	42°44'45" N	Relative depth:	0.6
Longitude:	71°33'00" W	Shore configuration:	1.15
Elevation (f	t): 197	Areal water load (m/yr)	: 6.85
Shore length	(m): 1800	Flushing rate (yr ⁻¹):	4.50
Watershed are	ea (ha): 280,0	P retention coeff.:	0.60
% watershed #	onded: 0.0	Lake type:	natural

BIOLOGICAL:	6 January 1989	28 June 1988
DOM. PHYTOPLANKTON (% TOTAL) #1	ASTERIONELLA 70%	DINOBRYON 85%
#2	RHIZOSOLENIA 25%	
#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)		1165.0
CHLOROPHYLL-A (Ug/L)		17.39
DOM. ZOOPLANKTON (% TOTAL) #1	SPARSE - NO DOMINANT	DIAPHANOSOMA 31%
#2		NAUPLIUS LARVA 22%
#3		CALANOID COPEPOD 14%
ROTIFERS/LITER	6	49
MICROCRUSTACEA/LITER	20	218
ZOOPLANKTON ABUNDANCE (#/L)	26	267
VASCULAR PLANT ABUNDANCE		Very abundant
SECCHI DISK TRANSPARENCY (m)		2.1
BOTTOM DISSOLVED OXYGEN (mg/L)	9.8	0.5
BACTERIA (fecal col., #/100 ml) #1		< 10
#2		< 10
#3		10

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermacline (m): None Hypolimnian valume (m³): None

CHEMICAL:			: FLINTS	POND	
	6 Janua	ary 1989	28 .	June 1988	
DEPTH (m)	1.0	2.0	1.0		2.0
pH (units)	7.0	6.9	7.6		7.5
A.N.C. (Alkalinity)	35.0		32.8		33.5
NITRATE NITROGEN	0.07	0.06			
TOTAL KJELDAHL NITROGEN	0.78	0.51	0.79		0.81
TOTAL PHOSPHORUS	0.024	0.026	0.026		0.024
CONDUCTIVITY (p mhos/cm)	178.7	178.2	156.1		157.5
APPARENT COLOR (cpu)	50	50	105		105
MAGNESIUM			2.30		
CALCIUM			14.4		
SODIUM			11.0		
POTASSIUM			0.80		
CHLORIDE	25	25			
SULFATE	8	8			
TN : TP	35	22			
CALCITE SATURATION INDEX			1.0		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1988

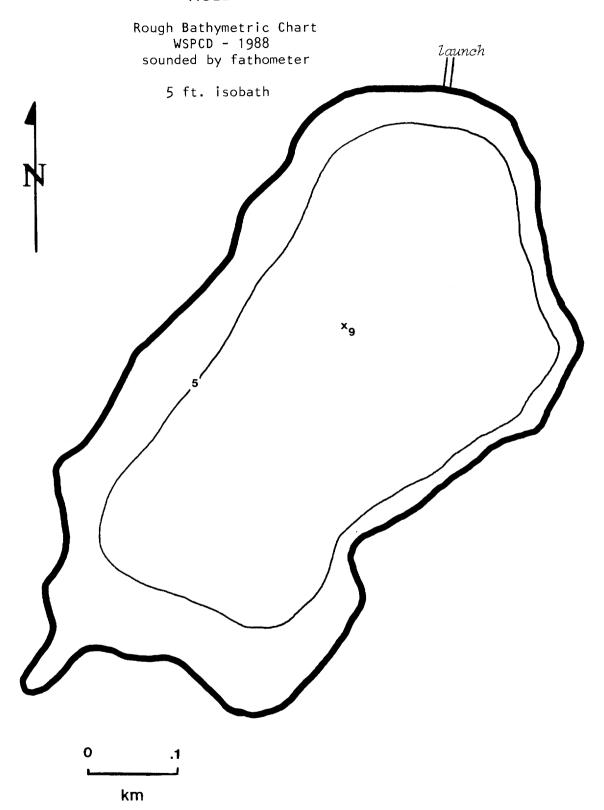
0.0.	S.D.	PLANT	CHL	TOTAL	CLASS
**	3	6	3	12	Eutro.

COMMENTS:

- 1. This pond was previously surveyed and classified in 1979. There was no significant change in water quality and the trophic classification remained the same.
- 2. Pond water was a very dark tea color with visual turbidity.
- 3. Dominant whole-water phytoplankton classes were cryptomonads (45%), greens (25%), and diatoms (20%). Cryptomonas (30%), Cymbella (20%), and tiny green flagellates (15%) were the dominant genera.

FLINTS POND

HOLLIS



FIELD DATA SHEET

LAKE: FLINTS POND

DATE: 06/28/88

TOWN: HOLLIS

WEATHER: MOSTLY CLEAR. BREEZY

e de la constante de la consta	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	23.7	8.6	101 %
	1.0	23.0	8.6	100 %
	2.0	21.0	4.6	53 %
	2.5	18.1	0.0	0 %
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SECCHI DISK (m): 2.1 COMMENTS: Despite the shallowness of

BOTTOM DEPTH (m): 2.6 the pond, there was no dissolved

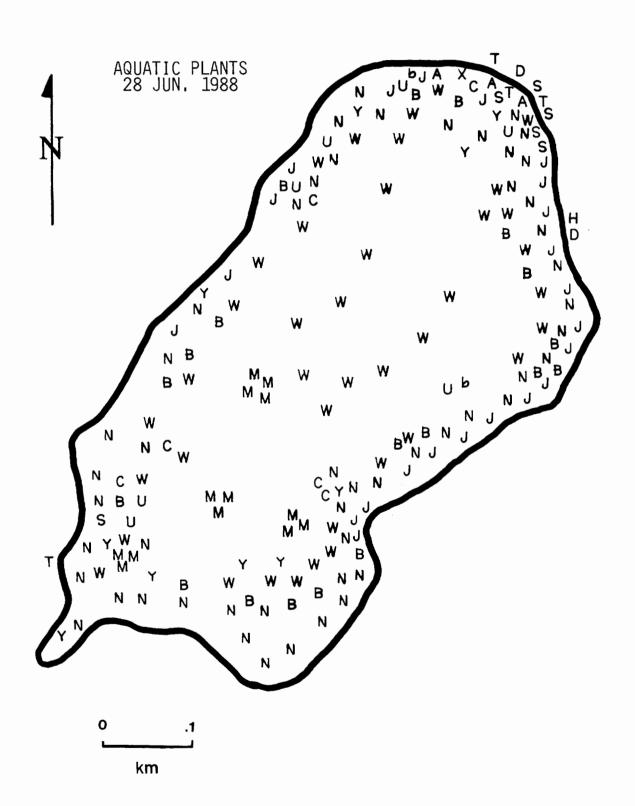
TIME: 1200

oxygen in the bottom waters.

*Dissolved oxygen values are in mg/L

FLINTS POND

HOLLIS



AQUATIC PLANT SURVEY

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Key	PLAI	ADUNDANCE		
Vea	GENERIC	COMMON	ABUNDANCE	
С	Ceratophyllum demersum	Coontail	Sparse	
Χ		Sterile thread-like leaf	Scattered	
Α	Peltandra virginica	Arrow arum	Sparse	
N	Nymphaea	White water lily	Common	
Υ	Nuphar	Yellow water lily	Sparse	
D	Decodon verticillatus	Swamp loosestrife	Sparse	
W	Potamogeton	Pandweed	Abundant	
S	Sparganium	Bur reed	Sparse	
T	Typha	Cattail	Sparse	
U	Utricularia	Bladderwort	Scattered	
В	Brasenia schreberi	Water shield	Scattered	
Ь	Scirpus validus	Softstem bulrush	Sparse	
J	Juncus	Rush	Scattered	
М	Myriophyllum heterophyllum	Water milfoil	Sparse	

OVERALL ABUNDANCE: Very abundant

GENERAL OBSERVATIONS:

- 1. Plant growth remained very abundant, as it was in the previous 1979 survey. The main adverse change was the appearance of the exotic species of water milfoil.
- 2. Patches of pondweed were throughout the middle of the pond; the milfoil formed scattered floating patches in the pond middle; bladderwort came up on the anchor and may be over much of the pond bottom it was probably more abundant than depicted on the adjacent map.
- 3. Plant abundance interfered with boating near much of the shore.